Playing Well With Others
Media Lab’s Mitchel Resnick Shares His Toys

A visit with Mitchel Resnick in MIT’s Media Lab is a lot like a play date. A professor in the Epistemology and Learning Group, Resnick is building tech-ed-up toys to help kids learn in radically inventive ways. In one project, he melds tiny computers, gears, motors, and sensors with traditional Lego bricks to create what he calls “the construction kit for the digital age.”

Lego’s February announcement that the company will market Mindstorms (a $200 digital product based on Media Lab designs) later this year met with considerable fanfare. But Resnick is already pushing ahead with the next generation of intelligent Legos. His group is developing smaller, lighter, and—parents will be relieved to hear—cheaper versions endowed with more capabilities than the Mindstorms. A child can easily program the devices to create communicating creatures, build Rube Goldberg machines, even invent their own scientific instruments.

At the Computer Clubhouse in Boston (a learning center for disadvantaged youths that he helped found), Resnick moves easily from troubleshooting a sticky Lego gear with a fifth-grade girl to discussing the finer points of computer graphics with a budding 18-year-old artist. It’s no surprise that the kids respond to Resnick. An animated talker with an almost incessant grin, he seems to understand how they think and want to give them the tools to design, create, construct, and learn.

Resnick treated TR Associate Editor Rebecca Zacks to a game of show-and-tell, demonstrating a couple of his computerized critters.

Resnick sits in his sunny office, a plethora of playthings spilling from between his books, papers, and computer equipment. He claims he can only talk when he has an object to fidget with, so he pulls out a new pen from a pack of 12 and begins:

Children grow up living in the physical world. They have all types of intuitions, experiences, passions about physical objects. And there are all sorts of great things that kids learn through a manipulation of physical objects, but there are certain things that are difficult to learn.

If we give kids new types of digital building blocks, they can learn not only about number, shape, scale, but they can learn about interaction, communication, dynamics, in the same way that they traditionally learn through direct manipulation.

From a cardboard box on a shelf behind him, Resnick pulls out a pair of small Lego constructions, each equipped with four wheels and infrared sensors. He points to the miniature computers, perhaps an inch across, carried in the belly of each toy.

This is what we call a cricket; it’s a type of programmable brick. This is extending the metaphor of the Lego brick and saying: What if we had a Lego brick but we put computation inside? And where traditional Lego bricks are good for building structures, these critters are good for building behaviors. In the past, kids would build castles and houses. Now kids can build things and make them come to life.

Resnick places the toys on the floor facing away from each other.

Here’s an example where we have two of these little creatures made out of crick-